

LISTING OF THE CLAIMS:

Please amend the claims as follows:

1. (Currently Amended) A signal switching system, comprising:
a signal switching part, receiving a plurality of inputs and switching any of said plurality of inputs to any of a plurality of outputs, said switching part including a control mechanism;
an optical router, receiving said signals from said outputs, and optically routing said signals, said optical router including a fault detecting element therein, which produces a fault signal to said signal switching part, said signal switching part responding to said fault signal to switch one of said inputs to one of said outputs based on said fault signal; and
an optical sampling element configured to sample said signals and produce a sample indicative of said fault signal which is used by said control mechanism to control said switching.
2. (Currently Amended) [[A]] The signal switching system as in claim 1, wherein said signal switching part includes n by n switch having n channels, and wherein at least a plurality of said n channels are redundancy channels.
3. (Currently Amended) [[A]] The signal switching system as in claim 1, wherein said signal switching part includes an optical switch having optical lines.
4. (Currently Amended) [[A]] The signal switching system as in claim 3 wherein said signals switching part includes a 16 x 16 optical switch.
5. (Currently Amended) [[A]] The signal switching system as in claim 3, wherein said signal switching system includes an 8 by 8 optical switch.
6. (Currently Amended) [[A]] The system as in claim 3, wherein said optical switch includes an optical detecting element, which detects a signal on one of said optical lines.
7. (Currently Amended) [[A]] The system as in claim 6, wherein said signal is formed as an amplitude modulated signal on said optical lines.
8. (Currently Amended) A method, comprising:

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sending a plurality of channels to a plurality of routers, where the plurality of routers have spare capability for failed routers; [[and]]

providing an optical signal from said routers; and indicating failure in said routers
sampling a portion of said optical signal to determine an error in said routers.

9. (Currently Amended) [[A]] The method as in claim 8, wherein said optical signal is provided as a modulation on at least one of said plurality of channels.

10. (Currently Amended) [[A]] The method as in claim 9, wherein said modulation is an amplitude modulation.

11. (Currently Amended) [[A]] The method as in claim 8, [[further comprising]] wherein sampling said [[and]] optical signal is used to control the sending of the plurality of channels as part of said sending, to determine said failure signal.

12. (Currently Amended) [[A]] The method as in claim 11, wherein said optical signal is an amplitude modulated signal.

13. (Currently Amended) [[A]] The method as in claim 12, wherein said signal includes information indicative of a frequency of said error.

14. - 31. (Cancelled)

Please add the following new claims:

32. (New) A system, comprising:

an all optical switch, capable of switching any of a plurality of inputs to any of a plurality of outputs, said switch including a control mechanism which controls said switching and an optical sampling element; and

a router array, producing an optical error signal indicative of errors in said router array, said optical error signal being coupled to said optical switch and being used by said control mechanism, wherein said optical error signal is modulated on one of said outputs and the optical sampling element produces a sample indicative of said optical error signal.

33. (New) A system, comprising:

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an all optical switch, capable of switching any of a plurality of inputs to any of a plurality of outputs, said switch including a control mechanism which controls said switching and an optical sampling element, wherein said control mechanism operates based on electrical signals and said optical sampling element includes an optical to electrical converter element, and a framer element, producing an electrical signal which is used by said control mechanism; and

a router array, producing an optical error signal indicative of errors in said router array, said optical error signal being coupled to said optical switch and being used by said control mechanism, wherein said optical error signal is modulated on one of said outputs.

34. (New) The system as in claim 33, wherein said optical switch is an n by n switch which can switch any of its n inputs to any of its n outputs, based on said control mechanism.

35. (New) The system as in claim 34, wherein said optical switch is a 16 by 16 switch.

36. (New) The system as in claim 33, wherein said optical switch includes two, 8 by 8 switches.

37. (New) A method, comprising:

carrying out all optical switching between a plurality of optical channels and a plurality of routers; and

providing signaling from said plurality of routers to effect said optical switching, wherein said signaling comprises determining errors in said routers, and producing signals indicative of said errors by inducing a signal on one of said optical channels, wherein said inducing comprises adding an indication of a channel number to said signal indicative of said errors.